

WellSpring

Beyond an Apple a Day: The Alberta Healthy Schools Project



Introducing Beyond an Apple a Day (BAAAD)

HEIDI BATES, BSc, TRI-NUTRITION CONSULTING, AND MARY ANNE YURKIW, MSc, RD, ALBERTA MILK.

Lifestyle factors underlie the trend towards obesity and overweight in Canadian children and youth. Most Canadian children and youth do not eat nutritionally balanced or adequate diets. In addition, only 30% of girls and 40% of boys aged between 13 and 17 years regularly participate in physical activity (CFLRI, 2000; Health Canada, 2002). Left unchecked, this situation could dramatically increase the prevalence of Type 2 diabetes and other chronic diseases.

The Purpose of Beyond an Apple a Day

Funded by Health Canada's Diabetes Strategy, this initiative was launched to reduce the prevalence of diabetes by promoting healthy eating and active living for youth in schools. BAAAD used a multifaceted strategy to

- understand the eating habits and activity patterns of youth in grades 7 and 8;
- identify the factors that influence the implementation of nutrition and physical activity policies and programs in schools.

An advisory committee guided the project. This committee included researchers from the University of Alberta, government (Health Canada, Alberta Health & Wellness, and Alberta Learning), Ever Active Schools, and a community nutritionist.

The Project's Methodology

The project's methodology included the following:

- a literature review of the eating habits and physical activity patterns of youth;
- focus group interviews of Alberta students in Grades 7 and 8, parents, and principals to qualitatively assess their attitudes and practices related to physical activity and nutrition;
- a mail-out survey to principals, school council chairs, and district superintendents to understand how nutrition and physical activity policies and programs are implemented in schools;
- a web survey of 717 grade 7 and 8 students (301 boys and 416 girls) from 31 randomly

Continued on p. 2

In this issue

- 3 Physical Activity Results**
- 5 Nutrition Results**
- 6 Who's Driving the Bus? Physical Activity and Nutrition-Related Policies**
- 8 News from the Alberta Centre for Active Living**

(N.B.: All references for the articles in this issue are available from the centre's web site at www.centre4activeliving.ca.)

selected schools across Alberta about their eating and physical activity patterns.

We reached students through the web survey by randomly selecting public and private school boards and then schools to participate in the survey. School principals suggested teachers who might be interested in participating in the survey (usually one or two from each school). We also obtained consent from the parents and students participating in the survey.

What Healthy Eating and Being Active Means to Youth

BAAAD conducted eight focus groups in urban and rural locations in Alberta. Four of these groups involved principals and school council members, and four involved only youth.

The focus group findings paint a striking picture of the challenges facing youth in adopting healthy, active lifestyles. The youth in the focus groups associated a number of practices and behaviours with “being unhealthy,” including taking in too much sugar, fat, caffeine, or “junk food,” or not eating enough food or high-calcium foods.

Paradoxically, while youth linked “junk food” with ill health and increased risk for disease, many also admitted having taste preferences for foods such as chips, chocolate, candy, and soft drinks.

Most children were aware of osteoporosis and the factors that promote bone health. Most youth also believed that “kids need to drink milk” in order to prevent osteoporosis. They also recognized the contribution of foods such as milk and cheese to health. However, milk drinking is not viewed as an “at school” practice. According to many participants, everyone drinks milk—just not at school.

Youth defined “being active” broadly, including everything from walking and playing with the dog to competitive sports. Rural youth reported being very physically active, which they attributed to farming lifestyles. Urban youth were active in sports, but did fewer chores. Sedentary activities such as shopping and computer games were also common among urban youth.

Barriers to Healthy Living

Youth in the focus groups identified a number of barriers that they feel prevent them from creating a healthier lifestyle:

- a taste preference for junk food;
- rebellion;
- the effort required;
- a fear of being judged/peer pressure;
- poor role modelling.

Specific barriers to physical activity included computers and gaming devices and health-related issues such as asthma.

Of the many healthy eating and physical activity concerns raised in the focus groups, the issue of vending machines in schools was the most contentious. Most students wanted to have access to pop and snack foods. For the principals and parent council members, the issue was much more complex.

Some school council members were troubled by the message sent by the sale of low-nutrient, high-profit foods. However, other school council members and principals were very aware of the revenue these machines bring to schools.

A Call to Action

BAAAD’s focus group data highlight the need for innovative approaches (focused on changes in behaviour and attitudes) to remove the barriers to healthy eating and active living in youth. We need new strategies that address the needs of youth at home, in school, and in their communities.

We also recommend using a population-health approach in these strategies, focusing on the factors that most significantly influence or determine health status (such as culture and ethnicity, social support and networks, gender, and education).

Heidi Bates is a nutrition consultant working with BAAAD. Mary Anne Yurkiw is the project manager for the BAAAD project.

Physical Activity Results

DRU MARSHALL, PhD, AND LISA WORKMAN, BPE, UNIVERSITY OF ALBERTA, EDMONTON, ALBERTA.

Research suggests that physical activity during childhood and adolescence can reduce the risk of mortality, lower the risk of disease, and increase mental health and well-being (Allison, 1996; Ernst & Pangrazi, 1999; Twisk, 2001).

The many studies of young people's physical activity levels generally agree that their physical activity levels decline with increasing age and/or grade level (e.g., Green, 2002; McKenzie, 2001; Ringuet & Trost, 2001; Sallis, 2000) and that boys are typically more active than girls (e.g., Cavill, Biddle, & Sallis, 2001; Stone, McKenzie, Welk, & Booth, 1998; Troiano, 2002).

In addition, boys tend to participate in more moderate to vigorous intensity activity, whereas girls tend to be involved in low to moderate intensity activity (e.g., Armstrong, Welsman, & Kirby, 2000; Dowda, Ainsworth, Addy, Saunders, & Riner, 2001; Pratt, Macera, & Blanton, 1999; Sallis et al., 1998).

So, how active are Alberta youth?

The BAAAD Project Web-Based Survey

One of the primary purposes of the BAAAD project was to determine the eating habits and activity patterns of Alberta youth in grades seven and eight. The BAAAD web-based survey provided a unique opportunity to

collect data on physical activity patterns in Alberta youth.

John Spence and Dru Marshall at the University of Alberta modified the survey (initially developed by Rhona Hanning at the University of Waterloo) to include questions on physical activity. Physical activity questions included the time spent in 16 different activities over the previous seven days, including outdoor activities after school and outdoor activities during the weekend. Students were also asked to report on their participation on interscholastic and extracurricular sport teams. The students usually completed the survey during class time, in about 45 minutes.

Calculating MET Scores

Using the data from the first physical activity questions, which asked about participation in 16 different activities over the previous seven days, we calculated a total physical activity score in metabolic equivalents (METs) for each participant.

One MET equals the amount of energy a person expends during rest (~ 3.5 ml of O_2 /kg/min [Montoye et al., 1996] or ~ 1 kcal/kg/hr [Foss & Keteyian, 1998]).

A MET score was determined for each activity based on the Compendium of Physical Activities (Ainsworth et al., 2000). We then multiplied this MET score by the number of times the student participated in that activity to arrive at an activity MET score.



For example, the MET score reported in the Compendium for basketball is 7 METs. If students participated in basketball three times during their seven-day recording period, their activity MET score for basketball was 21 (3×7 METs).

We calculated a total weekly MET score by simply summing each individual activity MET score for each student. Previous research (McMurray, Bauman, Harrell, Brown, & Bangdiwala, 2000a; McMurray et al., 2000b) has also included a MET score to measure physical activity levels of youth.

The BAAAD Physical Activity Findings

In general, boys were significantly more active than females (223 METs vs. 180 METs). In addition, the total physical activity score decreased with increasing age (see Figures 1 and 2).

Figure 1. Total Physical Activity Score: Gender Comparison

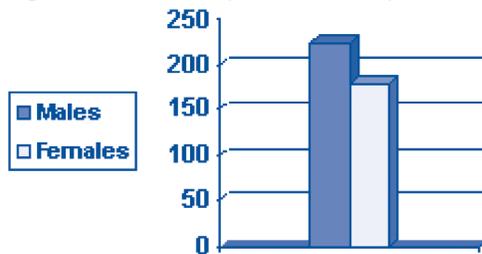
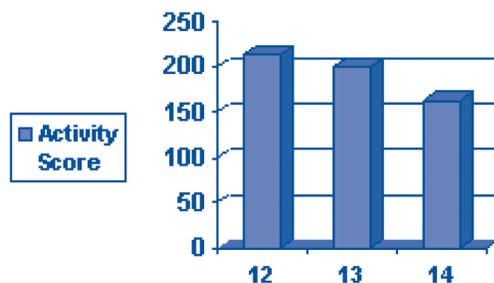


Figure 2. Total Physical Activity Score: Age Comparison



Both of these trends are well supported by current literature. When we examined the age-related decline in physical activity by gender, at every age the girls were less active than the boys. What's more, both genders reported a decline in physical activity over time (see Figure 3).

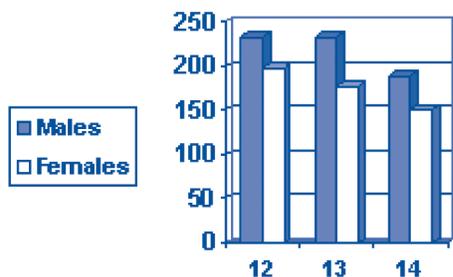


Figure 3. Total Physical Activity Score: Age and Gender Comparison

Generally, participants had higher total physical activity scores if they spent time outside right after school, were active during the weekend, and if they participated on school and community sport teams.

Clearly, given that physical activity is a preventive factor for many diseases, the decline in physical activity during adolescence is a concern, particularly the decline among girls.

Further, recent studies suggest that health-enhancing or health-compromising behaviours in adolescents tend to cluster for physical activity, dietary choices, and smoking behaviours (Stone, McKenzie, Welk, & Booth, 1998). In other words, if adolescents are inactive, they also tend to have poor dietary habits and to smoke. Thus, the future health of the population may be at risk.

We recommend paying special attention to physical activity programming for older adolescents and, in particular, for female adolescents.

Some Quotes from the Survey

- "We are part of the problem. I look at the kinds of confectionery items we sell...and we contribute to this. Chocolate almonds are also being sold for a ski trip. It drives me crazy that we do this, but we do because they sell" (principal's comment).

- "[Healthy food and physical activity choices are] not a school problem. Unfortunately, we have to deal with the symptoms" (principal's comment).

- "[The challenges are] the time to build it [healthy food and physical activity choices] into school life. [A] healthy lifestyle is a choice...very difficult to bring all stakeholders on board. We can show, support, and promote. We cannot force" (principal's comment).

- "For students...healthy foods and physical activity have to start at home. Parents who don't eat right or exercise are setting the same standards for their children" (school council member's comment).

- "[The biggest challenges are] a lack of [healthy food] choices in the school; lack of funding towards nutrition and physical activity; and scheduling conflicts" (school council member's comment).

- It takes effort to stay healthy" (student's comment).

Nutrition Results

KENDALL TAFT, RD, AND LINDA MCCARGAR, PhD, RD, DEPT OF AGRICULTURAL FOOD AND NUTRITIONAL SCIENCE, UNIVERSITY OF ALBERTA, EDMONTON, ALBERTA.

Between 1981 and 1996, rates of obesity in Canadian youth aged between 7 and 13 rose from 5% to 16.6% for boys and from 5% to 14.6% for girls (Tremblay & Willms, 2000).

Overweight children are more likely to be overweight or obese as adults, increasing their risk for heart disease. The rising number of overweight and obese children has also increased the incidence of Type 2 diabetes (a disease formerly associated with adulthood) in this population.

The BAAAD Project Web-Based Survey

This increase in youth obesity led to a web-based nutrition and physical activity survey, administered to grade 7 and 8 students throughout Alberta. The survey was designed to measure dietary intake, food behaviours, food beliefs, and physical activity during the previous week.

We analysed the nutrient intake data using the Food Processor SQL (ESHA Research, Salem, OR). We also classified food groups using the serving sizes in *Canada's Food Guide to Healthy Eating* (Health Canada, 1992). We used frequency comparisons to analyse data on food behaviours and food beliefs.

What the Survey Revealed

Preliminary data suggest that approximately 50% of boys exceeded Health Canada's recommendations for all four food groups. However, the other 50% were below the recommended ranges (Health Canada, 1992).

Fewer than 50% of girls consumed the recommended minimum levels for all food groups except fruit and vegetables (50% of girls exceeded the recommendations for this food group). Girls' generally inadequate nutrition is of special concern because teenage girls already experience lower dietary intakes and increased iron losses through menstruation.

The study also analysed results from the "Other" group—a food group consisting mainly of combinations of fat, sugar, and salt. Our analysis showed that approximately 50% of the sample consumed one or more servings from this category (based on the 24-hour food recall information).

The "Other" foods, which are high in calories and low in nutrients, should be consumed in moderation (Health Canada, 1992). The 50% of the sample consuming these foods risk gaining weight, with all of its associated health risks.

The proportion of total energy intake for both boys and girls fell within the recommendations for carbohydrate, protein, and fat. Total energy intakes for boys were fairly stable across the three age groups—12, 13, and 14-year-old boys consumed approximately 2,400 kcals per day.

Girls tend to take in fewer calories as they get older. Total intakes for 12, 13, and 14-year old-girls were about 2,050 kcals, 1,850 kcals, and 1,700 kcals.

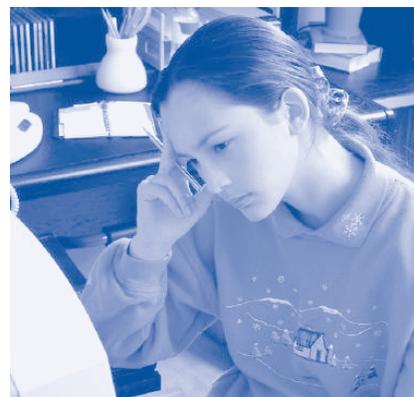
This decreased intake puts girls at risk for poor nutrition, especially as girls' nutritional requirements increase during adolescence due to growth spurts and a rapid increase in bone mass.

The EAR Measurement

Where possible, the study compared students' micronutrient intakes to the estimated average requirement (EAR). The EAR, used when assessing group intakes, is the nutrient intake estimated to meet the requirements of half the people in a particular life stage and gender group (Barr & Murphy, 2002).

We used the adequate intake (AI) to compare calcium intake. The AI is a recommended intake level that meets or exceeds the needs of almost all members of a life stage or group (Barr & Murphy, 2002).

A significant proportion of boys and girls, aged between 12 and 14, were below the EAR for niacin, iron, and folic acid and below the AI for calcium. These



nutrients play important roles in growth and development.

Furthermore, the proportion of boys and girls below requirements increased as they got older. Girls' intakes tended to be more inadequate than boys for each nutrient and at each age group.

Other Results

In addition to food-intake data, we also gathered information about meal frequency, eating out patterns, and food beliefs. Below are a few examples of our data.

- **Meal frequency:** Approximately 75% of boys stated that they ate breakfast every day. In contrast, only about 50% of girls ate breakfast every day. Fewer than 2% of boys and 4% of girls stated that they never ate breakfast.
- **Eating-out patterns:** Approximately 50% of both boys and girls ate fast food, restaurant meals, or take-out two to four times a week.
- **Food beliefs:** More than 75% believe that eating fruits and vegetables will reduce their risk for some cancers.

Summing Up

Youth are undergoing intense physiological growth at the ages in this study. However, our results suggest that many adolescents, especially adolescent females, in Alberta are not meeting their nutritional requirements for growth and development. We would recommend more vigorously promoting healthy eating to this age group, possibly through increasing school and community programs.

Who's Driving the Bus? School Physical Activity and Nutrition-Related Policies

JOHN C. SPENCE, PhD, AND DRU MARSHALL, PhD, FACULTY OF PHYSICAL EDUCATION AND RECREATION, UNIVERSITY OF ALBERTA, EDMONTON, ALBERTA.

The rapid rise in the prevalence of obesity among Canadian children over the past two decades (Tremblay & Willms, 2000) has led public-health organizations to call for more effective approaches to prevent obesity. The standard approach—trying to change the food habits and physical activity practices of individuals—has proved positive in the short term, but not very effective over the long term (Orleans, 2000). As a result, some researchers (e.g., Nestle & Jacobson, 2000; Swinburn, Egger, & Raza, 1999) advocate a broader, multi-level approach to prevention, one that addresses policy and the environmental factors that facilitate such behaviours.

To find out about the current policies that guide physical activity and nutrition in junior high schools in Alberta, the BAAAD project surveyed principals (n = 162), school council chairpersons (n = 113), and superintendents (n = 19) from across the province.

Important Issues in Schools

We asked school stakeholders to reflect on discussions in their schools or at school board meetings during the current school year. Ninety-five per cent of school stakeholders saw academic achievement as the most important issue. Although 73% of respondents considered the health of students important, only 50% saw physical education curriculum issues as significant and only 31% considered nutrition curriculum issues important.

Physical Activity and Nutrition-Related Policies

We asked schools about their policies over and above the physical education and health education curricula. Sixty-one per cent of schools had policies on physical activity, but only 35% had nutrition-related policies.

“Schools, parents, or school boards could take the lead and make the decision to have [healthy choices] as a focus and it would have very positive results. No one has done this yet because funding, staffing, and curriculum are taking the focus and the time” (web site survey response from a principal).

Respondents identified the support of the principal and the practical benefit to the students as the most important factors in being able to influence decisions about physical activity and nutrition-related health issues in the schools.

Opinions about Physical Activity and Nutrition

We asked respondents to indicate their level of agreement or disagreement with statements about physical activity and nutrition-related issues.

All respondents agreed strongly that physical activity in schools was important and that their schools fostered healthy physical education behaviours among students.

Further, most respondents believed that teachers regularly communicated the importance of physical activity to students and that teachers acted as good role models.

In contrast, half of respondents did not consider nutrition and healthy eating as important. Only half of all respondents reported that their school fostered healthy eating behaviours among students.

In response to another question, fewer than 40% of the respondents agreed that there was adequate instruction on nutrition for students in their schools.

Vending Machines

On the contentious issue of vending machines in schools, 23% strongly opposed the

machines, while 7% strongly favoured their use. Overall, twice as many respondents opposed vending machines (compared with the number of supporters).

Schools with vending machines most commonly used the profits for extracurricular activities, school trips, and athletic programs or sports equipment. Funds were less likely to be used to support educational, in-class, or library materials and equipment.

Principals and superintendents firmly believed that removing vending machines would result in students visiting local convenience stores for the same fast foods and beverages—leaving the schools with the same health and nutrition-related dilemmas, but without the additional revenue stream.

Barriers and Challenges to Healthy School Environments

School stakeholders rated the following factors as the most significant barriers to addressing physical activity and/or nutrition-related school health issues:

- inadequate facilities;
- budget impacts;
- a lack of staff support;
- a lack of qualified staff.

Respondents identified the following as some of the challenges in encouraging healthy food and physical activity choices:

- educating parents about healthy and nutritious foods;
- the ease and availability of pre-packaged and fast foods;
- the demand for junk food;
- a perceived shift to more sedentary pastimes (e.g., video games).

Summary

As individual behaviour change strategies have not been as effective as initially hoped, the time is ripe to consider other ways to bring about behaviour change. This study makes it clear that many opportunities exist for policy development around physical activity and healthy eating.



News from the Alberta Centre for Active Living

Centre's Contributions to the Healthy Alberta Web Site

www.healthyalberta.com

The centre is proud of its contributions to the Active Living and Healthy Eating sections of the Healthy Alberta web site (Alberta Health and Wellness' health-promotion web site for the general public). The centre will continue to provide new Active Living and Healthy Eating resources for this site every month. (We have contracted Heidi Bates, a very well-respected Alberta dietitian, to provide the Healthy Eating resources.) Check out this updated web site, which went live in late March, at www.healthyalberta.com.

Staff Changes

We're sorry to announce that Joanne Gesell, our Education Coordinator, has left the centre to join the InMotion Network. Among her many other duties, Joanne was co-editor of *WellSpring*. We wish Joanne all the best in her new position.

SummerActive

Health Canada recently announced that SummerActive 2004 will run from May 10-June 19, 2004. Agencies are encouraged to include SummerActive events and promotions in their programming.

A leader's guide, tip sheets, and other information will soon be available on the SummerActive web site. As in past years, the web site will include instructions for leaders to register their events and for participants to register their activities. All registrants will be eligible to win prizes. The web site will be updated very soon with 2004 information. You may wish to bookmark the site for your future use: www.summeractive.canoe.ca.

Centre Closure

The centre will be closed from April 30 to May 5 (we are getting new carpets). You will still be able to reach many staff members via e-mail.

Library Acquisitions

Visit our web site (www.centre4activeliving.ca) for information about the latest acquisitions in our Resource Library. The centre's Resource Library has an extensive collection of resources on physical activity, active living, chronic disease prevention, the benefits of recreation, health promotion, population health, health determinants, nutrition, heart health, and workplace wellness.

WELLSPRING EDITORIAL ADVISORY COMMITTEE

Claudia Emes, University of Calgary

Greg Hart, Beyond Compliance, Inc.

John Valentine, Grant MacEwan College

Maria Tan, Canadian Health Network

Joanne Gesell and Kathy Garnsworthy, Alberta Centre for Active Living

Mission Statement of the Alberta Centre for Active Living

Working with practitioners, organizations, and communities to improve the health and quality of life of Albertans through physical activity.

IF YOU HAVE ANY SUGGESTIONS OR QUESTIONS, WE'D LIKE TO HEAR FROM YOU.

Alberta Centre for Active Living

Percy Page Centre

3rd Floor, 11759 Groat Road

Edmonton, AB T5M 3K6

Phone: 780.427.6949 or 1.800.661.4551 (toll-free
in Alberta)

Fax: 780.455.2092

Web site: www.centre4activeliving.ca

E-mail: active.living@ualberta.ca

STAFF

Director: Judith Moodie

Research: Ron Plotnikoff, PhD,

Enrique Garcia, PhD

Older Adult Coordinator: Timothy Fairbank

Communications and Marketing Coordinator:

Kathy Garnsworthy

Centre Coordinator: Betty Lee

Resource Coordinator: Rosanne Prinsen

Bookkeeper: Carol Knoll

Administrative Assistant: Margaret Burns

Office Assistant: Gilda LaGrange

Canadian Health Network: Pauline Poon, Maria Tan,

Sally Press

Health in Action Project: Karena Apps Eccles,

Gwen Farnsworth

WellSpring is published three times/year.

ISSN 1187-7472

Alberta
Centre for
Active Living

Research and education for the promotion of physical activity